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REMARKS

Applicant notes that the Examiner, in the initial portion of the Office Action, suggested using the language "substrate" in the claims for clarity purposes. Applicant appreciates the Examiner's helpful suggestion, and such suggestion has been incorporated into all elected independent claims, except claim 64. Claim 64 is drawn to an embodiment wherein a superabsorbent polymeric material is incorporated within an expanded polymeric material, such as a fiber, rather than coated on a substrate of polymeric material.

Claims 41-43, 45, 46, and 49 were objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and/or cannot depend from any other multiple dependent claim. To satisfy this objection, Applicant has canceled claims 41-43, 45, 46, and 49 and replaced such claims with corresponding claims that do not refer to other claims in the manner set forth above. Thus, the Examiner is respectfully requested to withdraw the objection to claims 41-43, 45, 46, and 49.

Claim 33 was objected to as being improperly dependent upon claim 25 instead of claim 32. Such objection has been satisfied by changing the dependency of claim 33, and the Examiner is respectfully requested to withdraw such objection.

Claims 25-30 and 37-39 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The Examiner considered these claims to be incomplete for omitting essential structural cooperative relationships of elements, specifically, no spatial relation between the polymeric material, the resin coating, and the superabsorbent powder. The amended independent claims all require that the polymeric material is a substrate. Hence, the necessary spatial relationship is now present in the claims because the claims required a substrate coated with an at least partially cured

resin that is stably adhered to a superabsorbent polymeric powder. The Examiner is respectfully requested to withdraw this rejection in view of the above remarks.

Claims 25-27, 29-33, 37, 39, 40, 47, 48, 55-57, 64-68, 73, and 74 stand rejected under 35 U.S.C. 102(e) as being anticipated by Ahmed et al. The Examiner stated that Ahmed et al. discloses a composition comprising a thermoplastic component and at least one superabsorbent polymer. It was further stated that the composition may be formed into a film layer or applied to an article with various hot melt adhesion techniques. An extensive discussion of various features of Ahmed et al. was then presented.

At the outset, it is clear that Ahmed et al. does not anticipate the claimed invention because the resinous composition of Ahmed et al. is restricted to thermoplastic resins. Thermoplastic resins do not chemically react during heating following application to a substrate. Rather, thermoplastic resins simply remelt during such heating. On the other hand, the at least partially cured resins used in the coating of the claimed invention chemically react during heating or upon exposure to radiation. Resins that are cured by heat are referred to as thermosetting resins, and resins that are cured by radiation are referred to as radiation curable resins. The art-recognized differences between thermoplastic and thermosetting resins are more fully set forth at page 13 of the first edition of a publication entitled Powder Coating - The Complete Finisher's Handbook. A copy of this publication is attached hereto at Exhibit A.

As will be appreciated by the Examiner, the Ahmed et al. materials are not capable of at least partial curing because such materials are thermoplastic in nature. Accordingly, the claimed product is novel. Applicant also points out that Ahmed et al. does not disclose at least several other claimed features. Among the undisclosed features are the use of a substrate comprising a coextruded fibrous material having a non-absorbent polymeric core and a superabsorbent outer layer (claim 27), a

superabsorbent polymeric powder having a particle size distribution with a large proportion of its particles less than 100 microns (claim 31), the use of superabsorbent polymers for both powder and substrate (claims 32 and 33), the use of a foamed substrate (claim 36 and withdrawn claims 34 and 35), the use of the claimed product for cleaning (claims 55-57), and the incorporation of superabsorbent polymeric material into an expanded polymeric material (claims 64-68). Obviously, such features provide additional points of novelty. Moreover, the claimed invention would not be obvious in view of Ahmed et al. because the above-mentioned differences involve unobvious advantages. For example, the use of thermosetting or radiation curable resins results in a product that does not remelt or soften following curing. Obviously, the thermoplastic coating resins of Ahmed et al. will remelt. Cured coatings have a polymer network which is more resistant to coating breakdown than thermoplastic coatings. These advantages are discussed further in the Powder Coating - The Complete Finisher's Handbook publication (Exhibit A).

Regarding claims 64-68, Ahmed et al. does not disclose or teach the incorporation of superabsorbent polymeric material into expanded polymeric material. Such product is more fully discussed at page 15, lines 2-23 of the instant application. Hence, such claimed product is regarded to be both novel and unobvious.

As noted above, no action on the merits was made for claims 28, 34, 35, and 44, despite the fact that Applicant elected such claims. It appears that such nonaction may have been inadvertent because these claims were included in the elected invention, and an action on the merits of claim 36, which depends upon claim 34, was made in the Office Action. In any event, Applicant respectfully requests the Examiner to act on the merits of such claims. In anticipation of such further action, Applicant points out that all of the above claims involve a substrate of foamed polymeric material. No such substrate is disclosed in Ahmed et al., especially in combination with the use of an at least

partially cured coating; and thus such claims should be regarded by the Examiner as both novel and unobvious to one of ordinary skill in the art.

Claim 38 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmed et al., as applied to claims 25 above, taken further in view of Schaar.

The patentability of the claimed invention over Ahmed et al. has been extensively discussed above, and Applicant does not wish to further burden this record by repeating such discussion. The Examiner stated that Ahmed et al. does not teach the use of a urethane resin but that Schaar teaches the use of resinous binders, such as acrylic and urethane resins.

The reason that Ahmed et al. does not teach the use of a urethane resins is because urethane resins are thermosetting or radiation curable, and Ahmed et al. involves only the use of non-curable thermoplastic resins. Applicant submits that it would not be obvious to substitute one distinct art-recognized type of coating resins for another when it is considered that Ahmed et al. is directed solely to a single type of coating resin. Clearly, the respective resins function in a different manner and achieve different results. Accordingly, one of ordinary skill in the art would not find it obvious to substitute a resin that functions differently and achieves different results without suggestion from Ahmed et al. Schaar is not directed to absorbent products where its urethane resins are associated with superabsorbent polymeric powders. Thus, there is no teaching by Schaar to utilize urethane resins for such purpose. It is thus submitted that the claimed invention is not obvious over Ahmed et al. taken in view of Schaar.

Applicant considers that the application is in condition for allowance and respectfully requests notification to such effect.

Should the Examiner have any questions or require additional information or discussion to place the application in condition for allowance, a phone call to the undersigned attorney would be appreciated.

Respectfully submitted,

Date: June 8, 2004

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POWDER COATING

The Complete Finisher's Handbook

Edited by Nicholas P. Liberto, PE

Published by The Powder Coating Institute
Gregory J. Bocchi, Executive Director

ISBN 0-9643091-0-6

Second Printing 1997

Library of Congress Catalog Card Number: 94-078590

Published by The Powder Coating Institute
2121 Eisenhower Avenue Suite 401, Alexandria, VA 22314.
Tel. 703 • 684 • 1770; Fax: 703 • 684 • 1771

2 3 4 5 6 7 8 9 K 9 8 7

Production Services by Goyer Management International, Cincinnati Ohio
Cover Design, Photography and Computer Illustration by Photonics Graphics Inc., Cincinnati Ohio
Printed in the United States of America by C. J. Krehbiel Company, Cincinnati Ohio

Some resins, such as thermoplastic and electronic encapsulation powders, may be processed using friction grinding (ball mills) in which all components of the powder are added to a container containing ceramic balls. This container is then continuously rotated until complete mixing is achieved. For more information on powder processing, see PCI Technical Brief #13, located in the Appendix B.

Thermoplastic Versus Thermoset Materials

Powder coating types can be categorized into two broad divisions: thermoplastic and thermosetting. Thermoplastic powders do not chemically react during application or baking. Therefore, these materials will remelt after cooling when heat is applied. They are most often applied as functional-type coatings by fluidized bed application equipment, since it is relatively easy to provide heavier coatings necessary for increased protection properties. Generally, functional coatings are applied much thicker (> 10 mils [250 μ] or greater) than decorative coatings (1-4 mils [25-100 μ]). Typical uses for thermoplastic coatings include wire goods coating such as dishwasher and freezer baskets, pipes and valves for corrosion protection, spline shafts and shifter forks for low friction and wear, and as electrical insulation for bus bars and circuit breakers.

Unlike thermoplastic coatings, thermosetting powder coatings will chemically react during baking to form a polymer network which is more resistant to coating breakdown. Additionally, thermosetting powder coatings will not remelt after cooling when heat is applied. Functional thermosetting coatings are usually based on epoxy resins. Very thick functional thermosetting coatings (up to 100 mils [2500 μ] or greater) are most often applied by fluidized bed equipment using multiple heating and dip cycles. More typical are functional coatings in the (10-30 mil [250-750 μ]) range which may be applied by flocking or fluidized bed techniques in which the preheated part is sprayed or dipped into powder. Many motor rotors and stators are insulated using this technique. Also, the interior and exterior surfaces of pipe and the surface of reinforcing bars (rebars) are coated by spraying epoxy powder coatings on the hot substrate. Thermosetting powders can also be applied continuously to coil, wires, and screen mesh using the electrostatic fluidized bed coating technique. See Chapter 10 for more information of these methods of applying powder coatings.

Functional Versus Decorative

Even though there is widespread use of functional powder coatings for protective purposes, the vast majority of powders are utilized in decorative applications where color, gloss, and appearance may be the primary attributes. Most decorative coatings are applied as relatively thin coatings (1-4 mils [25-100 μ]) frequently using electrostatic spray processes and thermosetting powder coatings. Decorative thermosetting powder coatings are used in too many applications to list here. However, a few examples are: appliances (refrigerators, stoves, washers, etc.), various automobile parts, clear coating of brass and other metal parts, lawn mowers, etc.. In general, decorative thermosetting powder coating will be used where appearance and durability are required.

Thermosetting Powder Coatings

Thermosetting powder coatings are primarily composed of relatively high molecular weight solid resins (compared to liquid) and one of a variety of available crosslinkers. Types of resins commonly used in thermosetting powder coatings include epoxies, polyesters, and acrylics. Crosslinkers (curatives) used include chemical types such as amines, anhydrides, and blocked isocyanates. It should be noted that other types of crosslinker chemistries have been